

CLAIMS

1. A composition comprising (i) FCC catalyst particles and (ii) additive particles suitable for the reduction of NO_x emissions from an FCC regenerator, said additive particles comprising:
 - 5 a) a Mg and Al-containing anionic clay or solid solution,
 - b) a rare earth metal oxide,
 - c) alumina and/or silica-alumina, and
 - d) Y-type zeolite.
- 10 2. A composition according to claim 1 wherein the additive particles, calculated as oxides and based on the total weight of the additive particles, comprise:
 - a) Mg and Al-containing anionic clay in an amount of about 50-65 wt%,
 - 15 b) CeO₂ in an amount of about 2.5-20 wt%,
 - c) alumina in an amount of about 20-45 wt%,
 - d) a REY zeolite in an amount of about 2-10 wt%.
- 20 3. A composition according to claim 2 wherein the additive particles, calculated as oxides and based on the total weight of the additive particles, comprise:
 - a) Mg and Al-containing anionic clay or solid solution in an amount of about 50-65 wt.%,
 - 25 b) CeO₂ in an amount of about 6-12 wt.%,
 - c) alumina in an amount of about 25-35 wt.%,
 - d) a REY zeolite in an amount of about 3-8 wt.%.
4. A composition according to any one of the preceding claims wherein the additive particles additionally contain 2-8 wt% of silica.
- 30 5. A composition according to any one of the preceding claims wherein the additive particles additionally comprise Cu.

6. A process for preparing a composition according to any one of the preceding claims, comprising the steps of
 - (1) combining an aluminium source and a magnesium source in water to form an aqueous slurry;
 - (2) optionally milling the slurry,
 - (3) aging the slurry,
 - (4) combining a rare earth metal oxide or a precursor thereof with the product of step (3),
 - (5) spray-drying the product of step (4),
 - (6) calcining the spray-dried material,
 - (7) optionally slurring the product of step (6) in water,
 - (8) milling the product of step (6) or (7),
 - (9) combining the product of step (6), (7), or (8) with the alumina and/or silica-alumina and the Y-type zeolite,
 - (10) shaping the product of step (9) to form additive particles, and
 - (11) physically mixing said additive particles with FCC catalyst particles.
- 20 7. A process according to claim 6 wherein the aluminium source of step (1) is aluminium trihydrate and the magnesium source is magnesium oxide.
8. A process according to claim 6 or 7 wherein the alumina of step (9) is peptised pseudoboehmite.
- 25 9. Use of the composition according to any one of claims 1-5 in an FCC unit.